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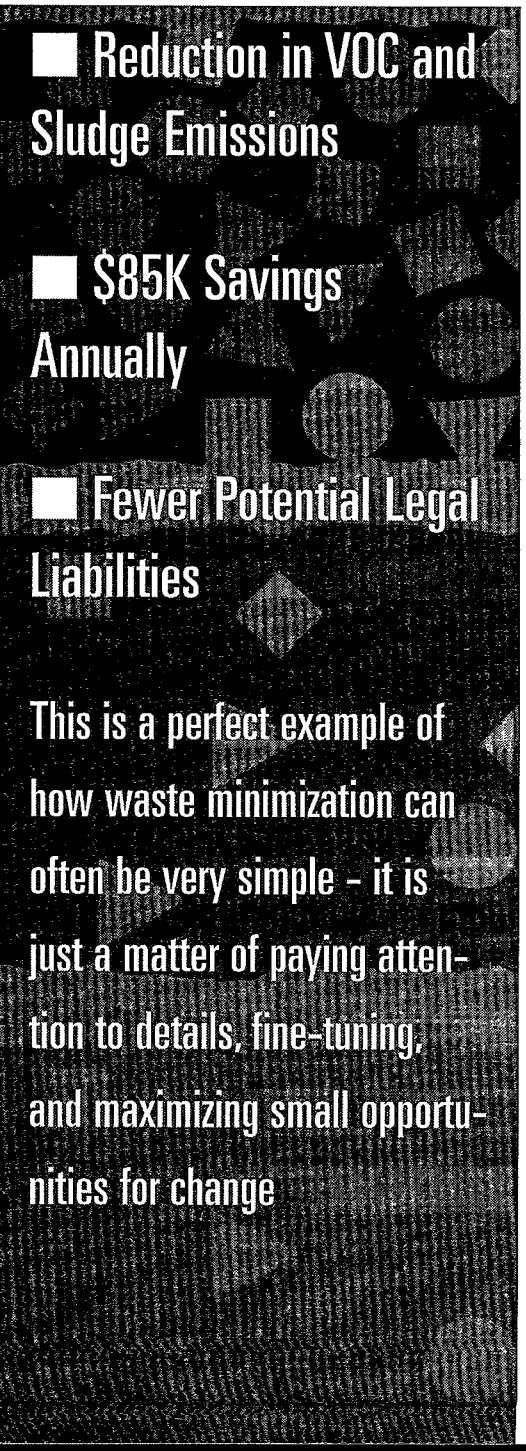
EPA

Waste Minimization: Reducing Paint Waste Through Efficiency

General Motors Hamtramck Plant



What Does the GM Hamtramck Plant Do?

The General Motors Hamtramck plant (Detroit and Hamtramck, Michigan) manufactures and paints various GM automobiles. At the time this project occurred, the Hamtramck facility was responsible for the production of flagship cars in the Cadillac line: the DeVille, Seville, and Eldorado.

What Did They Accomplish?

Constantly looking for ways to improve product quality and reduce waste, the plant recognized that its primer surfacer application could be improved. In particular, the jets were spraying paint for several fractions of a second after the target automobile had moved out of range. By changing the timing, an even coat of paint was applied while waste was slashed. The end result was a reduction of 5.5 tons of volatile organic compounds (VOC) emissions and four tons of paint sludge per year.

Environmental Achievements

Although the timing of the paint jets was adjusted by mere fractions of a second, the tremendous volume on which the plant operates meant that these simple changes yielded significant results. Adjusting the jets by varying increments resulted in the plant reducing 3,000 gallons of primer waste annually (which contained toluene, xylene, methanol and butyl cellosolve acetate).

Regulatory Relief

Though the GM Hamtramck plant's regulatory status has not changed, reduced waste makes for fewer opportunities for spills, accidents and violations, and therefore fewer potential legal liabilities.

The Implementation Process

The GM Hamtramck facility regularly holds meetings to examine methods for product improvement, waste reduction, and cost savings. Input comes from environmental engineering, paint shop maintenance, paint production, facility engineering, powerhouse personnel, purchasing, and finance. Supplier representatives are also an integral part of the team.

Implementation of this project involved no capital or labor costs on the part of GM. Worker training was unnecessary. This is a perfect example of how waste minimization can often be very simple—it is just a

matter of paying attention to details, fine-tuning, and maximizing small opportunities for change.

The effort took about a month, during which time an operational audit was conducted, the data analyzed, and solutions implemented. Tracking of success included gathering data on Toxic Release Inventory chemicals and materials consumption. The latter was accomplished via a purchasing system that tracks all purchases on a monthly basis.

Economics

At the time the project was implemented, an annual savings of $85,000 was achieved. This savings is primarily the result of lower paint and waste disposal costs. The savings have varied over time, due to production volume fluctuations. In addition, waste disposal requirements were cut.

Hurdles

The project was implemented during scheduled plant shutdowns, eliminating any disruptions. Product quality rose, since the cars now receive a more even application of paint.

Words to the Wise

Senior Environmental Engineer Roger Johnson noted that communication of successes is vital for a pollution prevention effort. Doing so not only gains recognition, but may also elicit ideas from people who might not otherwise have participated.

"If you achieve a success - communicate it!"- Roger Johnson

Another important aspect mentioned by Mr. Johnson is creating a culture that accepts change and innovation. Doing so facilitates rapid development of new solutions.